

REMARKS

Claims 13, 15 and 24-27 and 32 are pending. Claim 32 is new. Claims 1-12, 14, 16-23 and 28-31 are canceled. No claims are herein amended.

In the Final Office Action mailed September 24, 2007, the Examiner has continued to find claims 15 and 24-27 allowable. Applicants express their gratitude.

Support for new claim 32 may be found, for example, in the paragraph bridging page 1 and page 2 of the specification, at pages 12 and 23 of the specification and in Figures 3, 4 and 7. No new matter is added.

The rejection of claim 13 for obviousness-type double patenting over U.S. Patent Nos. 4,298,590 and 4,486,538 (based on inherency) and for inherent anticipation over U.S. Patent No. 4,486,538 has been maintained. The Office alleges U.S. Patent 4,486,538 inherently anticipates claim 13 because the prior patent allegedly “teaches production of purified monoclonal antibodies from monoclonal antibodies, which are deemed ‘single species’ of monoclonal antibodies (F-TAG and S-TAG, the same terms used to describe antibodies raised by inoculation with SEQ ID NO:2).” Office Action at 8. Applicants respectfully traverse the Office’s rejection of claim 13 because Applicants respectfully believe the Office has misstated the teachings of U.S. Patent No. 4,486,538 and the teachings of the specification concerning F-TAG and S-TAG monoclonal antibodies. Applicants respectfully submit that the cited patent and the specification clearly teach that F-TAG and S-TAG antibodies are defined by their kinetics (namely, how quickly each species binds to the malignin oncoprotein) and are not defined by the epitope to which the antibodies bind. One of skill in the art understands that the kinetics of the binding of an antibody, absent other considerations, would not necessarily be evidence of the epitope to which the antibody binds.

I. F-TAG and S-TAG are kinetic descriptions

One of ordinary skill in the art understands that identification of a species of antibody demonstrating certain kinetic behavior is not the same as identification of a species of antibody that binds to a particular, well-defined epitope like SEQ ID NO:2. Yet, the Office alleges that one of skill in the art would conclude antibodies disclosed in U.S. Patent No. 4,486,538 were

necessarily directed to the SEQ ID NO:2 epitope of the malignin oncoprotein simply because the antibodies in U.S. Patent No. 4,486,538 were observed to have kinetics similar to antibodies specifically raised to SEQ ID NO:2. The Applicants respectfully traverse this conclusion.

The Office observes that both U.S. Patent No. 4,486,538 and the present specification use the same terms (F-TAG and S-TAG) to describe antibodies produced from an immunological challenge with an intact malignin oncoprotein and antibodies produced from an immunological challenge with SEQ ID NO:2 (an epitope on the malignin oncoprotein). Office Action at 8. The Office further notes that U.S. Patent No. 4,486,538 refers to F-TAG and S-TAG as “species” of antimalignin antibody and that Applicants observed some antibody production against SEQ ID NO:2 demonstrated both F-TAG and S-TAG kinetics. The Office alleges, therefore, that one of skill in the art would conclude antibodies disclosed in U.S. Patent No. 4,486,538 were necessarily directed to SEQ ID NO:2. *Id.* Applicants respectfully traverse this conclusion, as it is not supported by the disclosure of the cited patent or the specification.

F-TAG and S-TAG are terms that describe the kinetics of an antibody, not the epitope to which an antibody binds. U.S. Patent 4,486,538, col. 21, ll. 49-63. One of ordinary skill in the art understands that the kinetics of an antibody are determined by a myriad of factors including, for example, protein folding. One of ordinary skill in the art further understands that identification of a species of antibody demonstrating certain kinetic behavior is not the same as identification of a species of antibody that binds to a particular, well-defined epitope like SEQ ID NO:2.

The Office’s conclusions drawn from Applicants’ use of the term “species” to describe F-TAG and S-TAG antibodies do not comport with an understanding of one of ordinary skill in the art concerning antibody kinetics and epitopes and the clear distinction between these two concepts. Applicants’ reference to the “species” of F-TAG and S-TAG antimalignin antibodies would not be understood by one of ordinary skill in the art as a reference to particular epitopes on the malignin oncoprotein. Applicants, therefore, respectfully request the Office withdraw the pending rejection of claim 13 for inherent anticipation

II. Specification teaches a similarity between the observed kinetics of antimalignin antibodies generally, but does not teach that antibodies to SEQ ID NO:2 were earlier produced

The Office misstates the teachings of the specification when it alleges a *prima facie* case of inherency by equating species of antimalignin antibody defined by their kinetics and species of antimalignin antibody defined by their binding site (epitope). The specification makes clear that the production of slow-binding antimalignin antibodies (S-TAG) and fast-binding antimalignin antibodies (F-TAG) in previously observed ratios is a demonstration of the production of antimalignin antibody generally, not a demonstration of the production of antimalignin antibody to the SEQ ID NO:2 epitope specifically. Spec. at 23-24.

The Office has not recognized the distinction between the genus of S-TAG and F-TAG antimalignin antibodies (defined by kinetics of binding) and the genus of epitope-specific antimalignin antibodies (defined by species that bind to particular epitopes on malignin). The specification, to the contrary, recognizes the distinction.

The specification teaches that two rabbits were injected with SEQ ID NO:2 in combination with adjuvants. In the first rabbit (Figure 8A), antibodies to SEQ ID NO:2 were produced that bound slowly (over two hours) to immobilized malignin extracted from glioblastoma cancer cells. The Applicants had previously designated slow-binding antimalignin antibodies as S-TAG antibodies. See Cancer Detection and Prevention 12:313-320 (1988). In this first rabbit, no significant production of antibodies to SEQ ID NO:2 that bound quickly (over about ten minutes) to immobilized malignin extracted from glioblastoma cancer cells was observed. Spec. at 23. The Applicants had previously designated quick-binding antimalignin antibodies as F-TAG antibodies. See Cancer Detection and Prevention 12:313-320 (1988).

In the second rabbit (Figure 8B), antibodies to SEQ ID NO:2 that bound slowly to immobilized malignin (S-TAG) and antibodies to SEQ ID NO:2 that bound quickly to immobilized malignin (F-TAG) were both produced and the production of S-TAG antibodies was observed to reach a maximum before the production of F-TAG antibodies was reached a maximum. The specification teaches that the pattern of S-TAG and F-TAG production in the second rabbit was similar to a pattern of production observed *in vitro* when isolated lymphocytes were challenged with the intact malignin oncoprotein. Spec. at 23.

The Applicants then state concerning the immune response in the second rabbit: “The repetition of this phenomenon with synthetic peptide epitopes injected into rabbits is further confirmation of the fact that the synthetic peptides reproduce exactly the production and release into serum of antimalignin antibody.” Spec. at 23. In the context provided in the specification, one of ordinary skill in the art would not read the Applicants’ statement and arrive at a conclusion that Applicants’ earlier-disclosed antimalignin antibodies were directed at the epitope SEQ ID NO:2.

Instead, one of ordinary skill in the art would conclude that the anti-SEQ ID NO:2 antibodies disclosed in the specification were among the genus of antimalignin antibodies because some of the disclosed antibodies shared kinetics with antimalignin antibodies when binding to immobilized malignin, which, as discussed above, could play a significant role in the shared kinetics of the antibodies. Because the specification makes clear that the F-TAG and S-TAG description of antibodies is directed solely to kinetics and not to binding site, Applicants respectfully request the Office withdraw the rejection of claim 13 for inherent anticipation and double patenting.

III. Request for Examiner Interview

In view of the foregoing arguments, Applicants respectfully believe the application is in condition for allowance of all claims. Applicants respectfully request an interview with Examiner Emch and Supervisory Examiner Chan prior to any substantive action in response to this paper. Applicants believe an in-person interview will help clarify the issue at hand and provide assistance in moving forward prosecution of the above-captioned application.

CONCLUSION

It is believed that the present claims are in conditions for allowance and Applicants earnestly request the same. The fee for a Request for Continued Examination and any other fee that the Commissioner determines necessary for entry of the instant paper are hereby authorized to be charged to Kenyon & Kenyon LLP Deposit Account No. 11-0600.

The Examiner is invited to contact the undersigned attorney at 202-220-4268 to expedite allowance. An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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